Text2StayOnTrack: Improving Diabetes Self-management and Health During COVID-19 Using Personalized Text Messages

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Introduction

- The COVID-19 pandemic caused many clinics to provide patient care using telehealth services
- Type 2 diabetes mellitus, a risk factor for complications from infection by COVID-19, disproportionately affects minorities and the underserved [1]
- This study sought to support individuals with T2DM within social distancing guidelines to achieve optimal glycemic control, a measure thought to reduce susceptibility and severity of COVID-19 infection [2]

Aims and Objectives

- Develop a diabetes-focused educational text messaging program (T2SOT)
- Examine the feasibility of pilot-testing such a program during strict social distancing restrictions due to the COVID-19 pandemic
- Identify the impact of the educational method of text messages on self-management of diabetes
- Determine whether delivering health literacy-tailored messages impact health literacy scores in high and low health literacy groups

Materials and Methods

- Prospective pilot study with a mixed-methods, pre/post-test design
- Participants (n=8) completed pre-intervention quizzes to assess diabetes knowledge and health literacy level and were assigned to a low (LL, n=2) or high literacy (HL, n=6) group based on their scores
- Automated, bidirectional text messages were sent on three days a week for six weeks

	Sunday	Tuesday	Friday
8:00 AM	Trivia question	Trivia question	Healthy challenge
	Educational/ motivational	Educational/ motivational	Educational/ motivational
	Medication reminder	Medication reminder	Medication reminder

Table 1 – Example schedule of text message types

Text Messages

- Members of each group were sent messages according to health literacy level and preferred language—Spanish or English
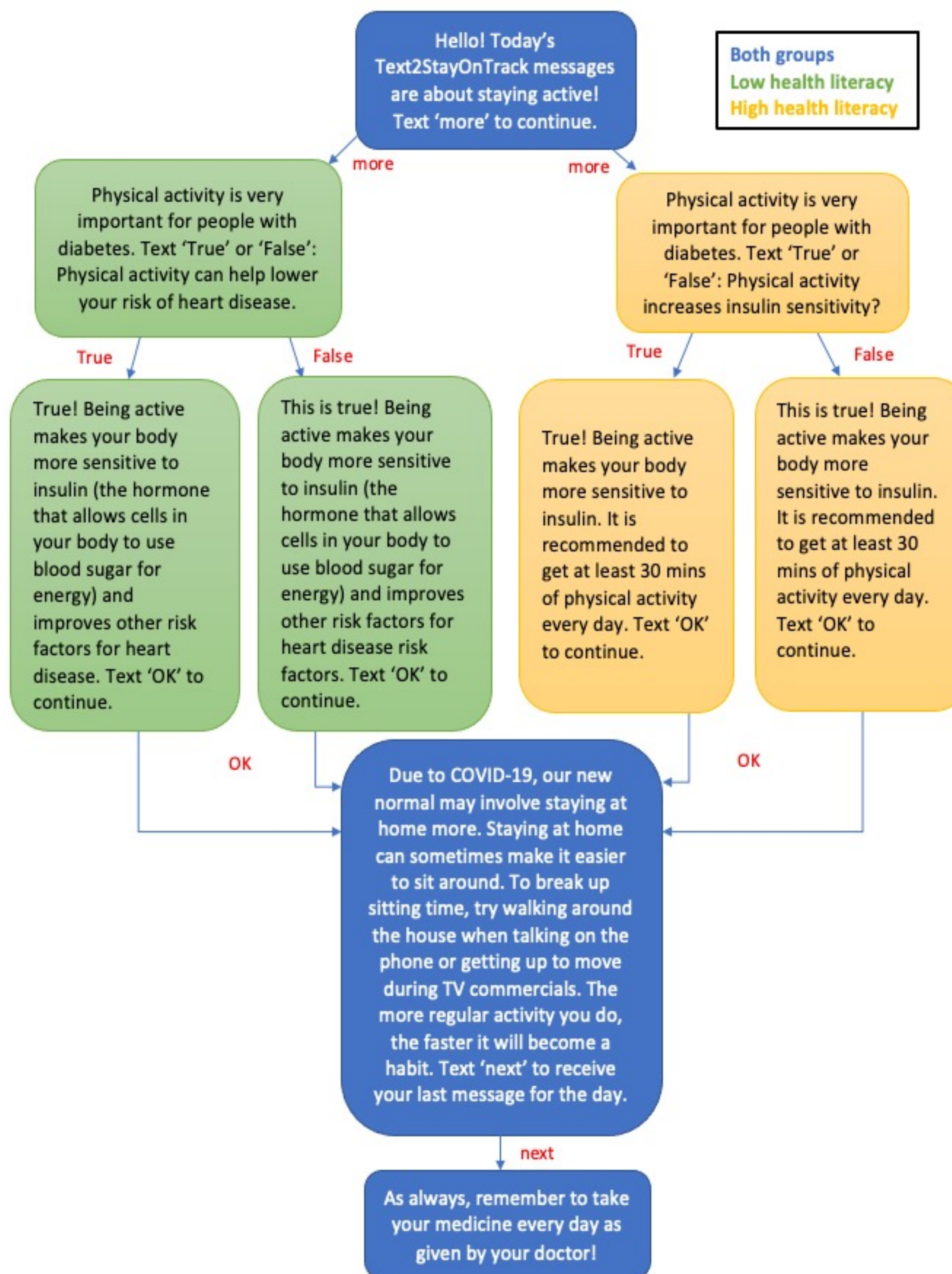

Figure 1 – Flow chart demonstrating difference in text message content between low and high health literacy groups from patients at the Gary Burnstein Community Health Clinic in Pontiac, Michigan

Results

- Pre and post intervention quiz scores were compared for both groups using a two-sample t-test
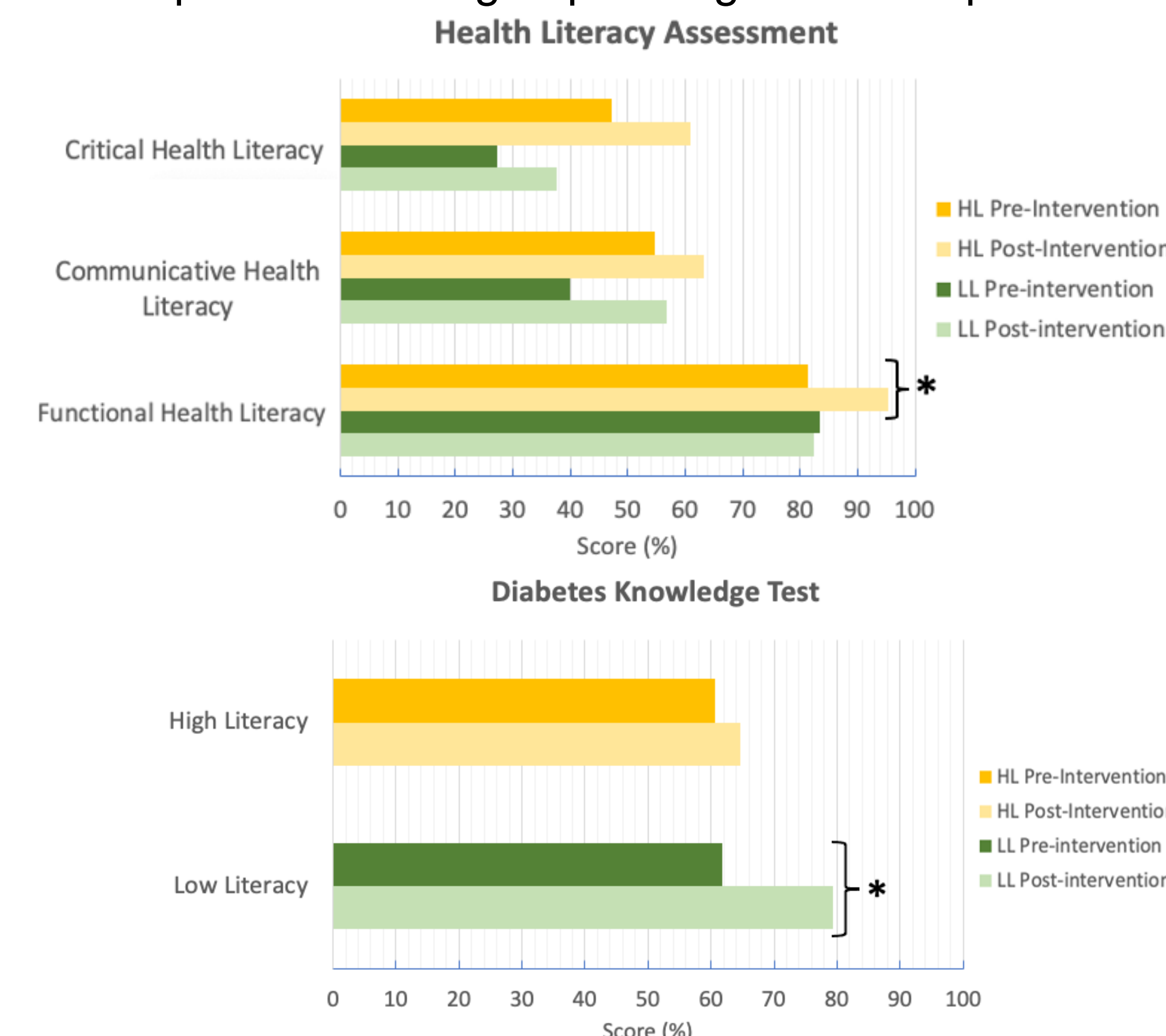

Figure 2 – Comparison of pre and post-intervention assessment of Health Literacy and Diabetes Knowledge. * $p < 0.05$

Conclusions

- T2SOT resulted in modest improvement in diabetes knowledge and high patient satisfaction
- This pilot project demonstrated that a larger study is feasible within this patient population and setting
- Further studies are needed to assess the efficacy of the text messages on different types of health literacy

References

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[2] Bhandari, S, Rankawat, G, Singh, A, et al. (2020) "Impact of glycemic control in diabetes mellitus on management of COVID-19 infection," *Int J of Diabetes in Developing Countries*, 40(3), pp. 340–345. Available at: https://doi.org/10.1007/s13410-020-00868-7.

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